UNIVERSITI PUTRA MALAYSIA

USER ACCEPTANCE OF THE E-PEROLEHAN SYSTEM AMONG GOVERNMENT USERS IN MALAYSIA

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By

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Thesis Submitted in Fulfillment of the Requirement for the Degree of Doctor of Philosophy in the Graduate School of Management University Putra Malaysia

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November 2007

Chair: **Professor Raduan Che Rose, PhD**

Faculty: **Graduate School of Management**

The study of user acceptance of new technology and technology innovation is considered to be one of the mature studies in the field of Information Systems (IS). User acceptance refers to the willingness of the user group to employ information technology for tasks the technology is designed to support.

This study looked into user acceptance of the ePerolehan system at the individual level in the context of business-to-consumer (B2C). ePerolehan is an electronic procurement system that converts manual procurement processes in the Government machinery to electronic procurement processes on the Internet. The study involved the use of an intention-based model and the Technology Acceptance Model (TAM) as its nomological framework. The constructs or variables of this study were subsumed in the quality dimension of the DeLone

and McLean Model of IS Success. This study framed ten (10) independent variables and two (2) dependent variables. The ten independent variables were perceived usefulness (subsumed in the system quality dimension), trust, perceived ease of use and perceived risk (information quality dimension), assurance, responsiveness and facilitating conditions (service quality dimension) and web design quality (system, information and service). The two dependent variables were Intention to Transact and Actual Transaction Behavior. The instruments utilized in this study were adapted and adopted from established instruments in the context of the ePerolehan system.

This study employed a survey using self-administered questionnaires which were distributed to 358 respondents (government users) of the ePerolehan system from a sampling frame of 1150 government users from 230 Pusat Tanggungjawab (procuring unit) of the 28 government ministeries and departments located in Klang Valley and Putrajaya.

The data analysis procedures administered in this study generally comprised of descriptive and inferential statistics using the Statistical Package for Social Sciences (SPSS) and a Structural Equation Model (SEM) using LISREL to examine the hypotheses. A competing model was developed which had several path relationships added to the original model and presented a good model fit which enabled the hypotheses to be tested. It was found that perceived usefulness, assurance, facilitating conditions, perceived risk and web design

quality (service quality) had significant relationships with Intention to Transact. Meanwhile, perceived ease of use, trust, responsiveness, web design quality (information and system) had insignificant relationships with Intention to Transact. Intention to Transact had a significant relationship with Actual Transaction Behavior.

This study addressed several limitations and recommendations for future studies were proposed to encourage further research on user acceptance studies.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

PENERIMAAN PENGGUNA TERHADAP SISTEM ePEROLEHAN DI KALANGAN PENGGUNA KERAJAAN DI MALAYSIA

Oleh

GEORGE PATRICK

November 2007

Pengerusi: **Profesor Raduan Che Rose, PhD**

Fakulti: **Sekolah Pengajian Siswazah Pengurusan**

Kajian mengenai penerimaan pengguna terhadap teknologi baru dan innovasi teknologi adalah dianggap sebagai satu pengajian yang matang dalam sektor Sistem Informasi. Penerimaan pengguna didefinasikan sebagai kesanggupan kumpulan pengguna untuk menggunakan teknologi maklumat bagi kerja-kerja yangmana teknologi berkenaan di rekabentuk untuk menyokongnya.

Kajian ini akan merujuk kepada penerimaan pengguna sistem ePerolehan pada tahap individu di dalam konteks perniagaan-kepada-pelanggan. ePerolehan adalah satu sistem perolehan elektronik yang menukar proses perolehan manual di dalam pentadbiran Kerajaan kepada perolehan elektronik atas talian Internet. Kajian ini melibatkan satu usaha untuk menggunakan model asas keinginan dan menggunakan Model Penerimaan Teknologi (TAM) sebagai asas kerangka kajian. Pembolehubah-pembolehubah di dalam kajian ini telah diterapkan dalam dimensi kualiti Model Kejayaan Sistem Informasi DeLone dan McLean. Kajian ini

mempamirkan sepuluh (10) pembolehubah tak bersandar dan dua (2) pembolehubah bersandar. Sepuluh pembolehubah tak bersandar adalah tanggapan kepenggunaan (diterapkan dalam dimensi sistem kualiti), kepercayaan, tanggapan mudah guna dan risiko tanggapan (diterapkan dalam dimensi informasi kualiti), kepastian, kemaklumbalasaan dan kondisi sokongan (diterapkan dalam dimensi perkhidmatan kualiti) dan kualiti rekabentuk laman (sistem, informasi dan perkhidmatan). Dua pembolehubah bersandar adalah keiniginan untuk membuat transaksi dan perlakuan transaksi sebenar. Instrumen yang digunakan di dalam kajian ini adalah dipakai dan disesuaikan daripada instrumen yang telah sediada dalam konteks sistem ePerolehan.

Kajian ini adalah merupakan satu bancian yang melibatkan borang soal-selidik yang ditadbir sendiri melibatkan 358 responden (pengguna kerajaan) sistem ePerolehan yang diperolehi daripada satu kerangka sampel yang meliputi 1150 pengguna kerajaan daripada 230 Pusat Tanggungjawab di 28 kementerian dan jabatan yang terdapat di Lembah Kelang dan Putrajaya.

Prosidur analisis data yang digunakan dalam kajian ini adalah merangkumi statistik deskriptif dan inferential yang menggunakan SPSS dan SEM dengan menggunakan perisian LISREL untuk menguji hipotesis-hipotesis kajian. Satu model persaingan telah diwujudkan yang mempunyai beberapa aliran hubungan yang telah ditambahkan kepada model asas dan telah mempamirkan satu model sesuai yang mampu menguji hipotesis kajian. Adalah didapati tanggapan

kepenggunaan, kepastian, kondisi sokongan, tanggapan risiko dan kualiti rekabentuk laman (kualiti perkhidmatan) mempunyai hubungan signifikan dengan keinginan untuk membuat transaksi. Manakala, tanggapan mudah guna, kepercayaan, kemaklumbalasan, kualiti rekabentuk laman (informasi dan sistem) tidak mempunyai hubungan signifikan dengan keinginan untuk membuat transaksi. Keinginan untuk membuat transaksi mempunyai hubungan signifikan dengan Perlakuan Transaksi Sebenar. Kajian ini telah mengemukakan beberapa faktor halangan dan turut mengemukakan beberapa cadangan untuk kajian masa depan bagi tujuan menambahbaik pengajian mengenai penerimaan pengguna.

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I certify that an Examination Committee met on **7 September 2007** to conduct the final examination of **George Patrick @ Marimuthu** on his **Doctor of Philosophy** thesis entitled **"User Acceptance of the ePerolehan System Among Government Users in Malaysia"** in accordance with Universiti Pertanian Malaysia (Higher Degree) Act 1980 and Universiti Pertanian Malaysia (Higher Degree) Regulations 1981. The committee recommends that the candidate be awarded the relevant degree. Members of the Examination Committee are as follows:

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This thesis submitted to the Senate of Universiti Putra Malaysia has been accepted as fulfillment of the requirement for the degree of Doctor of Philosophy: The members of the Supervisory Committee are as follows:

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DECLARATION

I hereby declare that the thesis is based on my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UPM or other institutions.

GEORGE PATRICK @ MARIMUTHU

Date: 29/11/07

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LIST OF ABBREVIATIONS

TAM	: Technology Acceptance Model
IS	: Information Systems
PC	: Personal Computer
ICT	: Information and Communications Technology
TRA	: Theory of Reasoned Action
TPB	: Theory of Planned Behavior
MSC	: Multimedia Super Corridor
PTJ	:Pusat Tanggung Jawab (Procuring Units at ministry/department)
R & D	: Research and Development
MNCs	: Multi-National Corporations
IT	: Information Technology
IDT	: Diffusion of Innovation
DTPB	: Decomposed Theory of Planned Behavior
UTAUT	: Unified Theory of Acceptance and Use of Technology
ISP	: Internet Service Provider
GITN	: Government Infrastructure Technology Network
eGAG	: eGovernment of Accounting General Office
MAMPU	: Malaysia Administration and Management Planning Unit
CDCSB	: Commerce Dot Com Sdn Bhd
CES	: Customer e-Commerce Satisfaction
B2C	: Business to Consumer
SPSS	: Statistical Package for the Social Science

CHAPTER 1

INTRODUCTION

1.1 Background

The study of user acceptance of new technology and technology innovation is considered to be one of the mature studies in the field of Information Systems (IS). The advent of technology as inputs in the realization of organizational productivity and enhancement of organizational performance has prompted researchers to study the determinants that ensure the successful acceptance of new technologies especially information technology among users. Among the various evaluation criteria of the success of systems, user acceptance of new technologies is the factor most frequently adopted by researchers. User acceptance refers to the willingness of the user group to employ information technology for tasks the technology is designed to support (Dillon & Morris, 1996).

Organizations invest in information systems for cutting costs, producing more without increasing costs, improving the quality of services or products (Lederer et al.,1998). It is a fact that attitudes of users towards and acceptance of a new information system have a critical and profound impact on successful adoption of information system. If users fail to accept the information system, it will not reap any benefits to the organization. When users accept a new information system, they are willing to make changes in their practices and use their time and effort to actually start using the new information system (Succi & Walter,

1999). As such, usage of a system can be an indicator of information system success and computer acceptance in some cases (Pikkarainen et al., 2004). Furthermore, Pikkarainen et al. (2004) iterated that using the system is connected with the effectiveness of the system – system that users regard as useless cannot be effective. Therefore, it is important to find out the reasons why people decide to use or not to use information system. The knowledge gained will assist both systems designers and developers in their work (Mathieson, 1991).

In this context, the study of user acceptance of the electronic procurement system (ePerolehan) is a deviation from the various technology user acceptance studies since it dwells upon a robust and an interactive technology. Most of the user acceptance research studies since the 1970s encompass simple and parsimonious technologies such as text editors (Davis et al., 1989); Microsoft windows 3.1 software packages (Karahana et al., 1999); and word processing, spreadsheets and graphics (Adams et al., 1992). It is the hope of this study that this deviation from the normal user acceptance literature would shed some insights as to what extent users of the ePerolehan system would use this system successfully especially in identifying and examining the determinants that would influence the acceptance of this system. The study would look into the individual level of user acceptance rather than at the organizational level in the context of business-to-consumer (B2C). This study involved the use of an intention-based model and the Technology Acceptance Model (TAM)(Davis, 1989; Davis et al., 1989) as it's nomological framework. The significance of utilizing TAM in

technology-driven contexts has been consistently important and so more relevant in an electronic commerce context such as the ePerolehan system.

User acceptance determinants from traditional IS studies (perceived usefulness and perceived ease of use) were integrated with determinants from the trust related literatures (trust and perceived risk), web design quality literatures, marketing literatures (assurance and responsiveness) and facilitating conditions and subsuming them in the DeLone and McLean Model of IS Success especially in the quality dimension of system, information and service to evolve a strong, rich and integrated theoretical framework to explain the actual usage (transaction) behavior of the ePerolehan system among government users..

1.2 Malaysia Information Communications Technology (ICT) Plan

The Eighth Malaysia Plan (2001 - 2005) was formulated to enable Malaysia to move into the Information Age. This was imminent with the necessary infrastructure and environment provided for the development of information and communication technology (ICT). Several programs and projects were implemented to necessitate a wider diffusion of ICT in the country. Multimedia Super Corridor (MSC) is a key initiative that was designated as a world test-bed for ICT development. This was due to the fact that ICT provided the best opportunities for productivity enhancement and improved competitiveness.

The introduction of MSC with its seven flagship applications was aimed to provide business opportunities for the private sector participation. One of the

applications is the Electronic Government (eGovernment) initiative which was developed with the prime objective of improving government operations especially the internal processes and delivery of services to the citizens and to businesses.

The ePerolehan system is one of the projects implemented under the Electronic Government flagship which is aimed to re-engineer the government procurement system from manual to an electronic system. This is anticipated to enhance the effectiveness and the efficiency of handling government procurements. The ePerolehan system would ensure that the government can purchase directly with a real-time online without going to the suppliers premises or without the suppliers coming to the office to promote their products. The net benefits from this system would include intelligent and best purchases, speedy and accurate payment to suppliers, enhancement of transparency and accountability in government procurement, shortening of the procurement work-cycle and consolidation of the data networking system for goods and suppliers.

To ensure the realization of the benefits of the ePerolehan system, this system must be used or accepted by its users (government users) extensively and without any doubts. The acceptance of any new technology must first be used so that it can be of benefit to any organization. The extent of successful user acceptance of this system ensured that no wastage of funds is realized and management of proper interventions such as adequate training and a better designing of the system could be implemented.